Guidelines
for Preparing Office and Shop Supplies for Disposal

Environmental Protection Department

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LLNL

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January 1995

Approved by the ES&H Working Group

_____ **Date** _____

Ronald W. Cochran
Laboratory Executive Officer

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Guidelines for Preparing Office and Shop Supplies for Disposal

Introduction

All employees at Lawrence Livermore National Laboratory (LLNL) must comply with federal and state laws, regulations, local ordinances, and LLNL policies that govern the disposal of office and shop supplies meeting the definition of hazardous waste. This document was prepared to help you follow these laws, regulations, ordinances, and policies and to acquaint you with the following:

- The definition of hazardous waste.
- The responsibilities of employees with regard to disposal of office and shop supplies that may be considered hazardous waste.
- The products that must be disposed of as hazardous waste, and the procedures for handling this waste.
- Ways of avoiding the generation of hazardous waste.

This document will be updated annually to include new products and provide information on changes to old products. You may obtain information on items not listed here from the Environmental Analyst who is assigned to your Environmental, Safety, and Health (ES&H)Team.

What Is Hazardous Waste?

Hazardous waste is any material not intended for use or reuse that is listed as hazardous or that exhibits any of the following characteristics:

- Ignitibility—has a flash point below 140°F (60°C) (e.g., acetone or certain alcohol mixtures), or is an oxidizer (e.g., hydrogen peroxide at a concentration >8%).
- Toxicity—presents a hazard to public health or to the environment (e.g., arsenic or lead).
- Reactivity—spontaneously reacts in air or water (e.g., sodium metal or concentrated hydrochloric acid).
- Corrosivity—has a pH ≤2 or ≥12.5 (e.g., acids, plating wastes, or strong bases).

Any container that previously held hazardous waste or material and is not empty as defined in the contaminated container regulation,[1] shall be managed as hazardous waste. Hazardous wastes are defined in the *Code of Federal Regulations*[2] and in the *California Code of Regulations*.[3]

Hazardous Waste Disposal

Waste Accumulation Areas (WAAs) are used to store hazardous waste collected from workplace accumulation areas, also called Satellite Accumulation Areas (SAAs), before transport to a Hazardous Waste Management (HWM) Division facility. The waste generator must properly identify, separate, package, label, and place the waste in a WAA. In areas provided "full service" by the HWM Division, some of these duties are performed by HWM Field Technologists.

The HWM Division of LLNL's Environmental Protection Department (EPD) is responsible for picking up properly prepared hazardous waste for treatment, storage, or offsite disposal and for managing all LLNL-generated hazardous waste after it leaves the WAAs.

The guidelines for preparing hazardous waste for disposal are given in an annually required training class, Hazardous Waste Generation and Certification, EP0006. Your Environmental Analyst can provide further information concerning identification, packaging, and labeling of hazardous waste.

Additionally, empty containers that previously held a hazardous material are subject to California's contaminated container regulations. These regulations specify conditions under which the waste generator can dispose of most empty containers with capacities of 5 gallons or less as nonhazardous waste. To dispose of such containers, follow the management practices outlined in Appendix A. Most empty containers of any size may be reclaimed for scrap value onsite or offsite if the container is properly packaged and transported.

When Is a Container Empty?

Appendix A summarizes the contaminated container regulations, defines empty containers, lists the container types that are excluded from the contaminated container regulations, discusses acceptable methods for removing excess material in containers, and describes management practices for empty containers.

Responsibilities Associated with the Waste Disposal Process

A **waste generator** is an employee at LLNL who works with or generates substances that are considered radioactive, hazardous, or mixed (i.e., containing both hazardous and radioactive constituents) wastes. The waste generator is responsible for:

- Identifying hazardous waste produced by an operation or experiment.
- Using correct packaging and labeling procedures.
- Facilitating the placement of waste from the SAA into the WAA.
- Notifying the WAA Operator of the amount and type of waste taken to the WAA.
- If necessary, contacting the Environmental Analyst or the HWM Field Technologist to ensure that the procedures being used for the disposal of office and shop supplies that contain hazardous waste meet current environmental standards.

A **WAA Operator** is responsible for:

- Performing day-to-day operations and activities at the WAA, including:
  - Receiving waste into the WAA from waste generators.
  - Maintaining waste stored in the WAA.
  - Preparing waste for transport to an HWM facility.
  - Conducting weekly inspections.
  - Assisting waste generators to arrange waste sampling.
  - Maintaining the documentation associated with WAA operations and activities.
  - Apprising the WAA Coordinator of the status of operations at the WAA.

An **Environmental Analyst**, assigned by the EPD's Environmental Operations Group to each ES&H Team, provides environmental compliance guidance to Programs that generate hazardous waste. The Environmental Analyst is responsible for:

- Assisting waste generators in identifying hazardous, radioactive, and mixed wastes and in implementing environmental requirements.
- Providing guidance on the proper packaging and handling of waste.

An **HWM Field Technologist** provides guidance in the preparation, storage, and removal of waste. The HWM Field Technologist is responsible for:

- Advising and assisting the waste generator in preparing waste for transport and storage.
- Assisting, when called upon, in the packaging, labeling, and sampling of waste.
- Verifying that the waste has been removed from the WAA by the HWM Division.
- Maintaining an inventory of waste in the WAA.

Products Classified as Hazardous Waste upon Disposal

There are three categories of commonly used office and shop supplies at LLNL that may be classified as hazardous waste upon disposal:

- General supplies.
- Copier supplies.
- Aerosols.

These are described below in greater detail. Before disposing of office or shop supplies, you must first determine if they contain hazardous constituents. If you do not know, obtain a Material Safety Data Sheet (MSDS) for the individual product.

What Is an MSDS?

An MSDS lists the federally hazardous components of and provides health and safety information related to a specific product. Because MSDSs are generally prepared for nationwide distribution, they may not list constituents that are considered hazardous only in California.

Where to Obtain an MSDS

You can obtain the MSDS for a product from the following sources:

- Your supervisor.
- The Hazards Control Department (HCD) Industrial Hygienist assigned to support your group or organization.
- The Technical Information Department (TID) Library. The TID Library has online access to a comprehensive MSDS database, giving you the ability to obtain an MSDS quickly when it is not readily accessible from other sources. Contact the TID Library at extension 2-4922.
- The product manufacturer.
- The Hazards Control MSDS hotline, extension 3-2122.

After obtaining an MSDS, contact your Environmental Analyst for assistance in determining the proper management and disposal practice for the product.

General Supplies

Appendix B lists the general stock items in Central Supply and Distribution (Central Supply) that contain hazardous substances.

Appendix C lists general nonstock items that contain hazardous substances and that are frequently purchased directly from the manufacturer.

When ordering general supplies directly from a manufacturer, you should request an MSDS as part of the order.

Copier Supplies

Liquid toners and other copier supplies that have a flash point below 140°F (60°C) (refer to the product's MSDS) need to be treated as hazardous materials and disposed of as hazardous waste. Dry, solid toner and developer, photoreceptors, and empty fuser-oil containers should be considered nonhazardous waste. Always seal these dry wastes in a plastic bag, and avoid inhalation of toner or developer powder.

Appendix D lists common copier and printer supplies that have a flash point below 140°F (60°C) and that must be disposed of as hazardous waste. Questions or concerns about specific supplies not listed in Appendix D should be referred to your Environmental Analyst.

Minimizing Copier Waste

The use of liquid copier and laser printer supplies that must be treated as hazardous waste should be minimized by leasing or purchasing equipment that either uses nonhazardous products or uses products that can be refurbished and recycled.

Recycling Toner Cartridges

You can now recycle and purchase reconditioned toner cartridges for selected printers. All printer toner cartridges can be returned for reconditioning through this program; however, fax or copy machine cartridges are not accepted at this time. To recycle toner cartridges, follow this procedure:

1. Reconditioned cartridges will arrive with a fluorescent return delivery tag attached to the outside of the shipping box. Use this box to return a spent (empty) cartridge.
2. Place the spent cartridge in the shipping box. Verify that the fluorescent delivery tag is attached and visible. If a return tag is not attached, use a standard return tag (Transportation Form LL-1158-1) and attach it to the box.
3. If you no longer have the original shipping box, use any available box and mark accordingly.
4. Call Transportation at extension 2-7489 and give the operator the pickup location. You can also drop off boxed cartridges at special receptacles located at Building 411, Receiving.

Order reconditioned toner cartridges through Central Supply at extension 2-7514. The Stock Number is 6040-71971. Reconditioned toner cartridges used in Apple, Canon, and Hewlett Packard printers, or any other printer with a Canon SX Series II engine are less expensive than new cartridges.

For more information on recycling toner cartridges, call the Earth Hotline at extension 3-2784.

Recycling Classified Toner Cartridges

You can also recycle classified toner cartridges through this same program, using the same sanitation process required for their disposal as solid waste. Contact your Safeguards and Security Program representative for additional details on the sanitation of classified toner cartridges before proceeding.

Aerosols

Aerosol containers that no longer deliver sufficient product for normal use may still have a small amount of product or propellant remaining in the container. Whenever any chemicals in the product or propellant are regulated materials, the container must be considered hazardous waste. Review the product's MSDS to determine if the aerosol product contains any regulated materials.

Hazardous aerosol propellants include the following materials: chlorofluorocarbons (CFCs), methane, propane, or other hydrocarbons that are defined as hazardous by federal and state regulations.

Aerosol cans that previously contained a product or propellant regulated by the California Environmental Protection Agency's Department of Toxic Substances Control (DTSC) must be managed as follows.

Aerosols That Are Considered Hazardous upon Disposal

Aerosol containers that still contain hazardous products or propellants upon disposal must be managed as hazardous waste. The aerosol container must be characterized according to the hazardous waste characteristics inherent to the product or propellant. If the product or propellant exhibits the hazardous waste characteristics of toxicity, corrosivity, ignitibility, or reactivity, then the aerosol container must be characterized accordingly. *An aerosol container shall not be characterized as "reactive" solely due to the pressurized state of the container from the propellant.*

Aerosol cans that still contain a hazardous product residue or hazardous propellant must be handled as hazardous waste and disposed of through the HWM Division. Appendix E lists some of the commonly used aerosol products that must be disposed of as hazardous waste.

Aerosols That Can Be Managed as Nonhazardous Waste

An aerosol container that meets both of the following criteria can be managed as nonhazardous waste:

- The spray mechanism was not defective, and the contents and propellant were discharged to the maximum extent practical under normal use.
- The container did not contain an extremely[1] or acutely[2] hazardous material.

Supplies which use nonhazardous and ozone-safe propellants are good alternatives to the supplies shown in Appendix E. They include:

- Aerosols that use a gas propellant, e.g., carbon dioxide, which is both nonhazardous and nonreactive with the ozone layer.
- Products that are packaged in nonaerosol (pump spray) containers.
- Products that can be applied with an application system that uses compressed air and reusable containers.

The section, "Avoiding Hazardous Waste Generation," further discusses available alternatives.

Aerosol Paint Products Containing Volatile Organic Compounds

The Bay Area Air Quality Management District (BAAQMD) has established volatile organic compound (VOC) content limits for handheld aerosol paint product containers (e.g., spray paint cans). The LLNL Main Site is within the BAAQMD boundaries and must comply with these limits, which can vary from 60–95% VOC content depending on the coating material and the use. Appendix F lists common noncompliant aerosol paint products. Contact your Environmental Analyst for guidance on specific applications.

Site 300 is located in the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD). Because the SJVUAPCD has not yet enacted similar restrictions on VOC content, Site 300 can still use aerosol paint product containers that cannot be used at the Main Site. However, for consistency, it is recommended that only compliant cans be used at both sites. Also, Central Supply only stocks products that comply with BAAQMD restrictions.

Avoiding Hazardous Waste Generation

To the maximum extent possible, minimize or eliminate the use of supplies that generate hazardous waste by selecting nonhazardous substitutes. Avoid generating surplus supplies by procuring only the quantity of items required from Central Supply. Generally, surplus supplies cannot be returned to Central Supply. If the surplus supplies contain hazardous constituents, they must be made available for use by others at LLNL or disposed of as hazardous waste.

Donation, Utilization, and Sales (DUS)

The Donation, Utilization, and Sales (DUS) Group within the Property Management Division administers the LLNL program for the disposition of government property through reutilization, donation, and sales. DUS accepts property-numbered items (e.g., capital and attractive) and non-property-numbered items (e.g., office supplies, furniture equipment, hardware, and scrap) that are nonhazardous. Contact your Property Center Representative, or call either DUS at extension 4-4103 or the Property Management Hotline at extension 4-5238 for more information on the excessing process.

Chemical Exchange Warehouse (CHEW)

The HWM Division operates the Chemical Exchange Warehouse (CHEW), which stores usable surplus chemicals for redistribution and use at LLNL. Contact the CHEW at extension 3-1996 for evaluation and pickup of surplus chemicals for possible reuse. The CHEW is also an excellent source of free chemical supplies, and it provides a one-day delivery service. Using the CHEW can avoid the costly procurement process and associated time delays.

Appendix G lists supplies that are not considered hazardous upon disposal. They are good alternatives to those products that must be managed as hazardous waste upon disposal or that result in the release of CFCs to the atmosphere.

Management of Supplies as Hazardous Waste

Surplus or used supplies that contain hazardous constituents or removable residues, respectively, and have no potential beneficial use must be managed as hazardous waste. Containers that previously held extremely[1] or acutely[2] hazardous materials must also be managed as hazardous waste unless they are triple rinsed as described in Appendix A.

Proper procedures for managing hazardous waste are taught in the course, Hazardous Waste Generation and Certification, EP0006. This course and its annually required refresher course must be successfully completed by all LLNL workers who generate hazardous, radioactive, or mixed waste.

EP0006 is provided through EPD. Attendance can be scheduled by filling out the form in the Course Catalog Bulletin distributed monthly or by contacting your Environmental Analyst.

An exception to this training requirement applies to workers who generate only small quantities of "office-type" waste (e.g., copier toner cartridges, white board cleaner, correction fluid) and janitorial staff who typically generate only small quantities of household/janitorial cleaning waste. In these cases, the supervisors typically attend the course and relay pertinent information to the workers.

Only an EP0006-trained person is approved to sign Hazardous Waste Disposal Requisitions (paperwork that describes and tracks the waste).

References

1. *California Code of Regulations,* Title 22, Division 4.5, Chapter 11, "Identification and Listing of Hazardous Waste," Section 66261.7, Contaminated Containers.

2. *Code of Federal Regulations,* Title 40, Part 261, "Identification and Listing of Hazardous Waste."

3. *California Code of Regulations,* Title 22, California Hazardous Waste Control Law.

Acronyms

BAAQMD	Bay Area Air Quality Management District
CFC	Chlorofluorocarbon
CHEW	Chemical Exchange Warehouse
DOT	U. S. Department of Transportation
DTSC	Department of Toxic Substances Control
DUS	Donation, Utilization, and Sales
EPD	Environmental Protection Department
ES&H	Environmental, Safety, and Health
HCD	Hazards Control Department
HWM	Hazardous Waste Management
LLNL	Lawrence Livermore National Laboratory
MSDS	Material Safety Data Sheet
PCB	Polychlorinated biphenyl
SAA	Satellite Accumulation Area
TID	Technical Information Department
VOCs	Volatile Organic Compounds
WAA	Waste Accumulation Area

Appendix A

Management and Disposal of Empty Containers

Any container that previously held hazardous material or waste must be managed in accordance with hazardous waste management requirements upon disposal unless it meets an exemption in the contaminated container regulations adopted by the California Environmental Protection Agency's Department of Toxic Substances Control (DTSC). Containers that meet the "empty" criteria of the contaminated container regulations may be managed in a less restrictive manner than other hazardous waste. The contaminated container regulations allow empty *containers of a capacity of 5 gallons or less* to be disposed of in the municipal trash and empty containers of any size to be reclaimed as scrap or reconditioned for reuse under special handling conditions. The contaminated container regulations also contain identical requirements for the inner liners of containers.

Definition of an Empty Container

A container is considered empty under the following criteria:

- For containers that formerly held pourable hazardous material or waste, no residual material or waste can be poured or drained from the container when the container is held in any orientation (e.g., tilted or inverted).
- For containers that formerly held nonpourable hazardous material or waste, no material or waste remaining in or on the container can be feasibly removed by physical methods commonly employed to remove materials from the containers. A thin, uniform layer of dried material or powder is considered acceptable in the container; and physical methods (scraping or chipping, but excluding rinsing) are allowed to achieve the empty criteria without a treatment permit, conditional exemption, permit, or permit waiver. The physical method of removal must meet all applicable air pollution control laws.
- For containers that held materials or waste considered to be extremely[1] or acutely[2] hazardous, the containers must be triple rinsed with a solvent capable of removing the material before the container is considered empty. Triple rinsing currently requires a treatment permit, conditional exemption, permit, or permit waiver from the DTSC when used to meet the empty criteria. DTSC processes are lengthly and should be handled through the Environmental Analyst.
- For aerosol containers, the container is emptied of the contents and the propellant to the maximum extent practical under normal use, excluding a defective spray mechanism that did not allow total discharge of the product and propellant.
- For gas cylinder containers, the pressure in the container approaches atmospheric pressure.

Container Types That Must Be Managed as Hazardous Waste

The following types of contaminated containers are excluded from the contaminated container regulations and must be managed as hazardous waste:

- Containers constructed of absorptive material (e.g., wood, paper, or cardboard) that have been in direct contact with, and have absorbed, hazardous material or waste.
- Used oil filters (if not being recycled).
- Polychlorinated biphenyl (PCB)-contaminated equipment.
- Containers associated with vehicles (e.g., roll-off bins, Baker tanks, tank trailers, etc.).

Acceptable Methods for Removing Excess Material in Containers

Various methods may be used to remove excess material from a container to ensure that a contaminated container meets the empty criteria. The physical methods (e.g., pouring, aspirating, scraping, or chipping) that are commonly used to remove product from a container may also be used to remove excess material for the purpose of

meeting the empty criteria without obtaining a DTSC treatment permit, conditional exemption, permit, or permit waiver. However, any excess material removed from a container must be used for its intended purpose or must be managed as hazardous waste. In addition, compliance with applicable air pollution control laws must be ensured for whichever method of material removal is used.

Methods such as rinsing and triple rinsing require a treatment permit, conditional exemption, permit, or permit waiver from the DTSC when used to meet the empty criteria. DTSC processes are lengthy and should be handled through the Environmental Analyst.

Most contaminated containers of 110 gallons or less, which are not constructed of an absorptive material and which held hazardous material or waste, can be rinsed for purposes of meeting the empty criteria when a conditional exemption is obtained from the DTSC. Your Environmental Analyst can assist you in obtaining this permit. The rinsing of containers greater than 110 gallons requires a treatment permit.

Contaminated containers of 110 gallons or less which are not constructed of an absorptive material, which meet the empty criteria, and which have been rinsed, can be further treated by a physical process (e.g., shredding or crushing) to better manage the container when a conditional exemption permit is obtained from the DTSC.

Note: A container of 5 gallons or less which meets the empty criteria may be rinsed without a treatment permit, conditional exemption, permit, or permit waiver to better manage the container. Although rinsing prior to the physical process is not required, if the container is rinsed, the rinsate must be containerized, properly managed, and characterized for hazardous constituents.

Management Practices for Empty Containers

To qualify for the contaminated container exemption, a container must meet the empty criteria as well as be managed in accordance with the following practices:

- Containers of 5 gallons or less in capacity may be disposed of at a solid waste facility (such as the municipal trash) if the container is properly packaged and transported.
- Containers of any size may be reclaimed for scrap value onsite or offsite if the container is properly packaged and transported according to DOT regulations.
  - If a waste generator wishes to reclaim containers greater than 5 gallons in capacity, the containers must be marked with the date they were emptied and must be reclaimed within one year.
  - If containers with a capacity greater than 5 gallons are sent to an offsite facility, the waste generator (LLNL) must maintain records for three years (at a minimum) with the name, street address, mailing address, and telephone number of the owner and operator of the offsite facility.
- Containers of any size may be reconditioned or remanufactured (pursuant to prescribed methods) for onsite or offsite reuse if the container is properly packaged and transported in accordance with U. S. Department of Transportation (DOT) requirements. In addition,
  - Containers greater than 5 gallons in capacity must be marked with the date they were emptied.
  - Containers must be reconditioned or remanufactured within one year.

Appendix B

General Stock Items That Contain Hazardous Substances

This appendix contains a partial list of potentially hazardous general stock items used at LLNL or carried by LLNL's Central Supply. Contact your Environmental Analyst for an evaluation of other items.

Product (brand name)	Stock number	Hazardous constituents	Dispose of as:
Adhesive (**Double Bubble**)	8040–56362	Epoxy resin	Municipal garbage if hardened during use; hazardous waste if not hardened
Adhesive (**Dux Seal**)	8030–28165	Chlorinated paraffin (suspected animal carcinogen)	Hazardous waste
Adhesive (**Permabond** No. 910), 20-g bottle	8040–28191	Ethyl cyanoacrylate, methyl cyanoacrylate	Hazardous waste
Adhesive, removable TL 242 (**Lock-n-Seal**)	8040-66431	Polyglycol dimethacrylate, cumene hydroperoxide, methanol	Hazardous waste
Alumicut	9150-65145	Distillate (solvents)	Hazardous waste
Aluminum putty	8030-28174	A diglycidyl,ether resin	Municipal garbage if hardened during use; hazardous waste if not hardened
Batteries, lead acid	Group 6140	Lead, sulfuric acid	Recyclable waste to Building 419, Battery Shop
Batteries, rechargeable, nickel cadmium, e.g., radio pagers	Group 6135	Nickel, cadmium	Hazardous waste
Battery packs, rechargeable, for calculators	Group 6135	Nickel, cadmium	Hazardous waste

continued...

Appendix B

Product (brand name)	Stock number	Hazardous constituents	Dispose of as:
Batteries, rechargeable, pure lead, for emergency lights	Group 6135	Lead acid	Hazardous waste
Batteries, rechargeable, lead-calcium, for emergency lights	Group 6135	Lead acid	Hazardous waste
Cement, household (**Duco**), 1.75-oz size	8040–28208	Acetone, butyl acetate, denatured ethyl alcohol	Municipal waste if hardened during use; hazardous waste if not hardened
Cement, rubber, for paperwork, 4-oz size	8040–28233	Solvent naphtha	Hazardous waste
Cement, rubber, thinner, 1-pt and 1-gal sizes	8040–28234 8040–51778	Solvent naphtha	Hazardous waste
Cleaning solution for whiteboard, porcelain, and dry-erase surfaces (**Sanford's Expo**)	7930–69876	Isopropanol-ethyl-3-ethoxyproprionate	Hazardous waste
Correction fluid, solvent base (**Wite-Out** No. 109), 0.5-oz bottle	7510–57748	1,1,1-trichloroethane	Municipal garbage if dry[a]
Correction fluid, thinner (**Wite-Out** No. 163), 0.6-oz bottle	7510–42214	1,1,1-trichloroethane	Municipal garbage if dry[a]
Epoxy resin	8040–52384	Epichlorohydrin	Municipal waste if hardened during use; hazardous waste if not hardened
Platen cleaner, rubber-roller rejuvenator for typewriter and printer platens (**NBI**), kit	7930–69559	Xylol, ethanol, methanol, ethyl acetate, methyl isobutyl ketone	Municipal garbage if dry[a]

continued...

Appendix B

Product (brand name)	Stock number	Hazardous constituents	Dispose of as:
Spray enamels[b]	Group 8010	Mineral spirits, xylene, methylene chloride, hexane, toluene, acetone, isobutanol	Hazardous waste
Tapping compound (**Cim TAP**)	9150–33596	Polychlorinated biphenyls (PCBs)	Hazardous waste
Wood dough	8030–27960	Methyl ethyl ketone, acetone, textile spirits, isopropanol	Municipal waste if hardened during use; hazardous waste if not hardened

[a] This guidance was verbally verified with the DTSC on 5/28/93 by EPD. A record of communication of the guidance is on file with the Environmental Operations Group and the Permits and the Regulatory Affairs Group in EPD's Operations and Regulatory Affairs Division.

[b] Verify that the spray enamels are not listed in Appendix F, "Nonconcompliant Aerosol Paint Products."

Appendix C

General Nonstock Items That Contain Hazardous Substances

This appendix contains a partial list of potentially hazardous, general nonstock items used at LLNL. Contact your Environmental Analyst for an evaluation of other items.

Product (brand name)	**Hazardous constituents**	**Dispose of as:**
Alarm sensor adhesive (**Loctite Corp.**, Part No. 12335)	Cumene hydroperoxide, polyurethane methacrylate resin, acrylic acid, poly(ethylene), silicon dioxide	Hazardous waste
Alarm sensor primer (**Loctite Corp.**, Part No. 12335)	Trichloroethylene, isopropyl alcohol	Hazardous waste
Alkyd resin solution (**Glyptal, Inc.**)	Xylene	Hazardous waste
Automotive gasoline (**Diablo Petroleum**)	Gasoline	Hazardous waste
Dow Corning silicone catalyst (**Dow Corning Corp.**)	Dibutyltindilaurate	Municipal garbage if hardened during use; hazardous waste if not hardened
Electrolyte solution (**Belta 7 Corp.**)	Potassium hydroxide solution (1 normal)	Hazardous waste
Ethanol, ethyl alcohol (**Polymer Industries**)	Ethanol	Hazardous waste
“Freon” TF solvent (**G. C. Freon**)	Chlorofluorocarbons (CFCs)	Hazardous waste
Handy oil 15, lubricating base oil (**Chevron**)	Refined solvents	Hazardous waste

continued...

Appendix C

Product (brand name)	Hazardous constituents	Dispose of as:
Montroy supply resin flux remover (**Ashland Chemical Co.**)	Aromatic hydrocarbon, chlorinated hydrocarbon	Hazardous waste
Nitrile rubber/resin in solvent (**W. J. Ruscoe Co.**)	Methyl ethyl ketone	Hazardous waste
Penetrating lubricant (**Perform, Madison Bionics**)	Methylene chloride, xylene	Hazardous waste
Rapid Tap (**Relton Corp.**)	Methyl chloroform	Hazardous waste
Reducing thinner (**Glyptal, Inc.**)	Xylene	Hazardous waste
Storage Tek hub and transport cleaner fluid (**Stantex Chemical, Inc.**)	Trichlorotrifluoroethane, isopropyl alcohol, nitromethane	Hazardous waste
Trimethylhexamethylene diamine (**Nuddex, Inc.**)	2,2,4-trimethylhexamethylene-diamine	Hazardous waste
Yellow 77, all “31” series catalog numbers **(Ideal Industries, Inc.**)	Naphthenic B (mineral oil)	Hazardous waste

Appendix D

Copier and Printer Products with a Flash Point below 140°F (60°C) That Are Hazardous Waste

This appendix contains a partial list of potentially ignitable copier and printer products used at LLNL or carried by LLNL's Central Supply. Contact your Environmental Analyst for an evaluation of other items.

Manufacturer/Product	Flash point (°F)	Stock number
Canon		
Corona wire cleaner	54	6750
Savin		
Electrostatic dispersant	102–107	6750
Ricopy PPC toner	123	6750
3M		
Lens cleaner	102	6750
Xerox		
ECP toner premix	102–107	6750
ECP toner concentrate	102–107	6750
Type H, V80 toner concentrate	102–107	6750
Type H, V80 toner premix	102–107	6750
CE premix	102–107	6750
CE premix, Type H	102–107	6750
ECP premix	102–107	6750
ECP concentrate	102–107	6750
Lens and mirror cleaner	81	6750
Film remover	54	6750

Appendix E

Aerosol Stock Items That Must Be Disposed of as Hazardous Waste

This appendix contains a partial list of aerosol products that contain hazardous substances used at LLNL or carried by LLNL's Central Supply. Contact your Environmental Analyst for an evaluation of other items.

Product (brand name)	Stock number	Hazardous constituents	Propellant
Anti-static spray	Group 6750	Ethanol, methanol, cocoammonium nitrate, methylbis (2-hydroxyethyl)	Liquefied petroleum gas
Cleaner for CRTs (**Rotanium**), 16-oz can	7930–67567	2-butoxy ethanol	Isobutane
Cleaner, glass (**Gleem**), 15-oz can	7930–48775	2-butoxy ethanol, ethyl alcohol, methyl alcohol	Hydrocarbon
Cleaner (**Magna-Flux**), 12-oz can	7930–58943	1,1,1-trichloroethane	Carbon dioxide
Cleaner, solvent, all-purpose (**Swish**), 15-oz can	6850–46741	Sodium metasilicate, ethylene glycol, monobutyl ether	Isobutane
Corrosion inhibitor	Group 6850	Ammonium bifluoride, hydrogen fluoride, phosphoric acid	Carbon dioxide
Industrial penetrant	Group 9150	1,1,1-trichloroethane	Liquefied petroleum gas

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Appendix E

Product (brand name)	Stock number	Hazardous constituents	Propellant
Insecticide, multipurpose, 16-oz can	6840–13793	1,1,1-trichloroethane, pyrethrins	Propane, isobutane, n-butane
Lubricant **(Slix-It, WD-40)**	9150–66174	1,1,1-trichloroethane	Liquefied petroleum gas
Spray enamels[a]	Group 8010	Mineral spirits, hexane, methylene chloride, isobutanol, toluene, xylene, acetone	Propane, isobutane

[a] Verify that the spray enamels are not listed in Appendix F, "Noncompliant Aerosol Paint Products."

Appendix F

Noncompliant Aerosol Paint Products

This appendix contains a partial list of noncompliant aerosol paint products that were carried by LLNL's Central Supply. Contact your Environmental Analyst for an evaluation of other items.

Product (brand name)	Former stock number
Aervoe	
Paint spray, red (**Kerpro**)	8010-28108
Paint spray, yellow (**Kerpro**)	8010-28109
Paint spray, dark blue	8010-28110
Paint spray, aluminum	8010-28111
Paint spray, black flat	8010-28112
Paint spray, dark gray	8010-28113
Paint spray, clear acrylic	8010-28114
Paint spray, hammerfinish	8010-28116
Paint spray, white	8010-28117
Paint spray, green (**Kerpro**)	8010-42033
Paint spray, light gray	8010-43590
Paint spray, machine gray	8010-44112
Enamel, spray-on, red electric insulating	8010-47357
Enamel, spray-on, black semi-gloss	8010-62737
Sealer, white, spray (**Z-Lac**)	8010-64752
Paint spray, Alumatone white	8010-64753
Paint, (**Krylon**) workable fixative drawing protection	8010-65078
Primer, gray metal 1602	8010-65300
ZRC Chemical Products Corp.	
Cold galvanizing compound	8010-66524

Appendix G

Alternative Supplies That Are Not Considered Hazardous upon Disposal

This appendix contains a partial list of alternative supplies that are not considered hazardous upon disposal.

Product (brand name)	Stock number[a]
Cleaner, all-purpose (**Stynamite**, **Igepal**), 1 qt	7930–30260
Cleaner, compressed-gas, spray can and refill (**Micro-Duster**)[b,c]	7930–63452 7930–63453
Cleaner, glass (**Windex** with Ammonia D)[c]	7930–50477
Cleaning solution for ultrasonic cleaner (Atomic Products' **Radiacwash**)[d], 1 gal	7930–50884
Coolant for metal turning and shaping machines (**Trim-Sol**)	6850-66814
Correction fluid, water base, for use on originals and copies (Eberhard Faber No. 951), 0.5-oz bottle (**Wite-Out**)[e]	7510–63436
Correction fluid, water base, for use on copies only (**Liquid Paper** No. 710–01), 1-oz bottle (**Wite-Out**)[e]	7510–41625
Detergent, liquid (**Oakite Liquidet**)[f]	7930-30253
Dishwashing compound, for washing by hand, low-alkalinity, liquid	7930–66441
Disinfectant, germicidal and fungicidal, pine oil (**Pyntox**), 1 qt	6840–13789
Used film for **Polaroid** cameras	Group 6750
Flashbar for **Polaroid** SX-70 camera	6750–63181
Flashcubes, standard and high power, for **Polaroid** cameras	6750–60857 6750–61746

continued...

Appendix G

Product (brand name)	Stock number[a]
Machine-tool cutting fluid (Trim-Sol)	6850-70701
Metal polish (**Liberty**), 8 oz	7930–30294
Ribbons, typewriter	Group 7510
Spindle oil (**Singer** sewing machine oil)	Group 9160
Synthetic cutting fluid	Group 9150
White oil 22	9150-42422

[a] Items without catalog numbers are nonstock items.
[b] Texwipe Company, which manufactures Micro-Duster, has redesigned the container so that it can be completely emptied of all contents by following the manufacturer's instructions. The empty container can then be disposed of as municipal garbage. The stock number for this item has not changed.
[c] These are ozone-safe alternatives.
[d] Radiacwash meets LLNL discharge limits and can be disposed of by way of the sanitary sewer.
[e] The new formulation of Wite-Out is water based and can be disposed of as municipal garbage.
[f] All Oakite products must be evaluated by your Environmental Analyst before disposal.

NOTE: Oakite Liquidet at concentrations ≤50% meets LLNL sanitary sewer discharge limits and agreed-upon Livermore Water Reclamation Plant limits.

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